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1. GENERAL INFORMATION

1.1. ABREVIATIONS

FPR – Fiscal printer
EJ – Electronic Journal
SA – Software application
RA – Received on account
PO – Paid out

1.2. SAFETY REQUIREMENTS AND ENVIRONMENT CONTROL

1.2.1. SAFETY REQUIREMENTS

- Do not install the FPR near sources of water and do not allow contacts with water or other liquids.
- Do not install the FPR on unstable surfaces to avoid its overturning.
- Do not install the FPR near sources of heat.
- Do not install the FPR on vibrating or vibration-conducting surfaces if possible.
- Plug the FPR into electric outlets with 220V voltage and 50Hz frequency. Turn the FPR off from its power switch before plugging or unplugging it.
- Use only standard electric plugs. If the plug does not meet the requirements contact a qualified electrician to fix it.
- Should an extension cord be used it must also meet the same standard requirements. Do not plug electric motors, heaters or other devices with high consumption of electricity into the same extension cord.
- Do not use defective power supply cables; do not press or bend the power supply cable of the FPR.
- Do not insert metal objects into the FPR – electrical shock hazard.
- Unplug the FPR before cleaning it and do not use aggressive detergents.
- Do not try to repair the FPR on your own. If there are any problems contact the authorized service organization.
- Unplug the FPR and contact the authorized service organization in any of the following cases:
    - The power supply cable of the FPR is damaged;
    - The FPR is splashed with liquids;
    - There is a mechanical damage of the FPR;
    - FPR does not operate normally.

1.2.2. ENVIRONMENT CONTROL

- The icon on the right – struck out litter bin – means that this product must not be dumped together with the household trash. To protect the nature environment and human health, please separate this product from the other waste and recycle it.

1.3. INTRODUCTION TO TSL FP05

TSL FP05 fiscal printer is a fiscal device operating within a computer cash register system functioning as an Electronic Cash Register with Fiscal Memory with Electronic Journal. The width tape rolls is 57 mm.

TSL FP05 complies with the following standards:

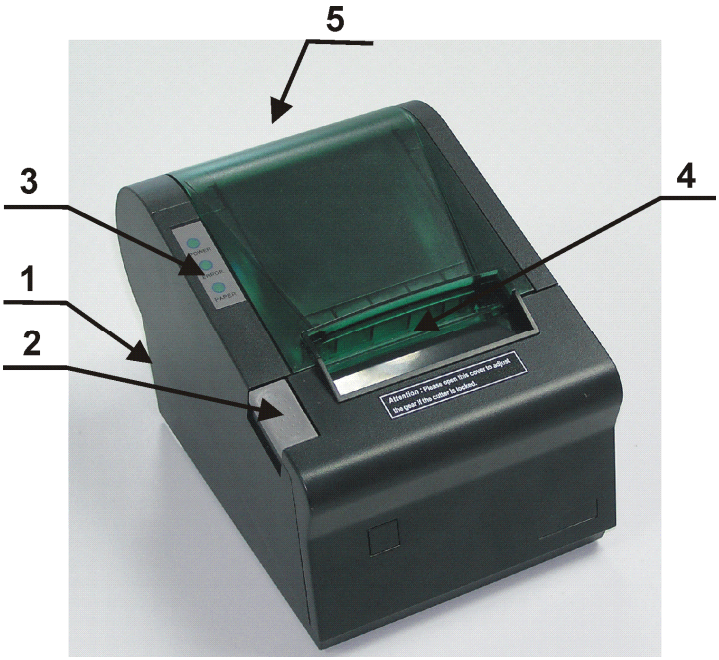
BDS EN 60950 for electrical safety;

BDS 15797-83 for operation in marginal ambient conditions (temperature from 0°C to 45°C and relative humidity up to 80%) and noise (<75dB/A at 1 meter from the device);

BDS EN 61000-6-3 and BDS EN 550022 class B for generated interference electromagnetic influence;

BDS EN 55024, methods BDS EN 61000-4-2, BDS EN 61000-4-4:2000, BDS EN 61000-4-6+A1:2002 for electromagnetic compatibility – resistance to interference.

1.3.1 EXTERNAL VIEW AND BASIC FPR PARAMETERS



1. Printer cover, locked if the printer is with cutter.
2. Paper shaft;
3. Control panel with 4 buttons and led indication;
4. Cover holder;
5. Interface panel.

1.3.2. GENERAL TECHNICAL AND FUNCTIONAL DESCRIPTION:

- Built-in fiscal memory with 2640 records. FM is separate module, providing inaccessibility to the data. The manufacturer puts seal for protecting of unauthorized access.
- Electronic Journal with option to be sent through PC interface
- Non-volatile real time clock.
- Non-volatile CMOS memory for storing accumulated turnovers and other system information.
- Easy load line thermal printer CITIZEN with auto cutter 8 dots/mm 200mm/sec.
- RS232 interface for PC communication and application control.
- Built-in USB serial port.
- VFD display interface – 2 rows X 20 characters.
- Drawer interface.
- Control panel with light indication.
- DIP switch panel for configuration .
- User programmable registers: 8 VAT Groups, 99 departments, 20 cashiers, 1000 articles, 5 payment types.
- Free sell operation.
- Department report.
- Various user reports.
- Two communication protocols support

1.3.3. CONTROL PANNEL

light indication description:

Luminous diode means turned on device, the color and rate describes following situations::

Green : FP is on and ready for work.

Red: General Error - CMOS, FM etc.

Orange: temporary error – no paper, cutter not in home position, opened cover, or printer overheat. When the error is clear the light goes green again.

Orange blink: the power – from battery or adapter is low for printing.

Button description:

Button ◆ 'FUNC' with following functions:

- When hold ◆ before turn the printer on, prints diagnostic information .

Button ▲ 'FEED' with following functions:

- Feed the paper .
- When hold ◆ and when pressed ▲ the daily report without zeroing is printed.
- When both buttons ◆ and ▲ are hold before the printer is turned on a brief FM report is printed.

1.3.4. DIP SWITCHES

Under the paper groove is situated dip switch panel with 8 switches with following meaning:

1,2 and 3 — baud rate

0, 0, 0 - 9600 bps

0, 0, 1 - 19200 bps

0, 1, 0 - 34800 bps

0, 1, 1 - 57600 bps

1, 0, 0 - 115200 bps

4 — not used;

5 – obligatory sending the EJ to PC by interface (OFF — not obligatory; ON — obligatory);

6 — not used;

7 and **8** – printer density:

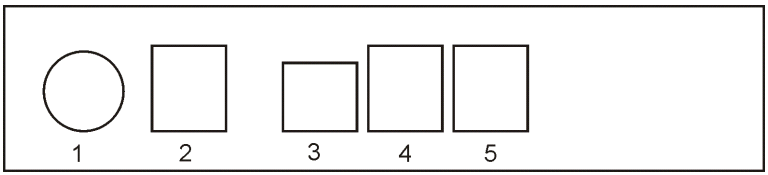
0, 1 - low

0, 1 - middle

1, 0 - high

1.4. CONNECTING THE FISCAL PRINTER

On the back side of the printer is situated the interface panel with following interfaces:



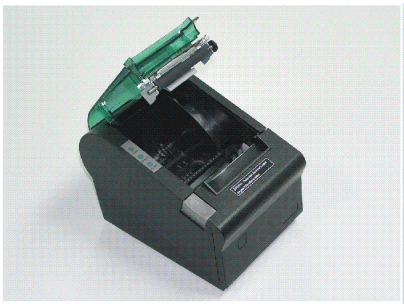
1) Power supply – plug only the original adapter that is part of the original package. The electricity availability is indicated by the diode next to the connector.
2) drawer control – 12V standart POS interface for drawer;
3) USB interface – use the standart cable;
4) Interface for customer display - if needed ask for more information the support service;
5) RS232 PC interface - use the interface cable for serial connection from the the device package.

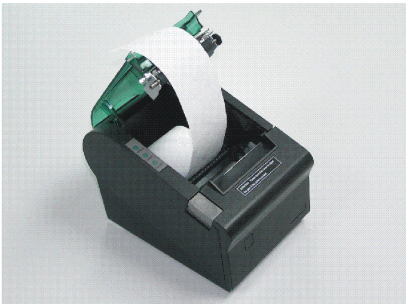
1.5. PAPER LOADING

Thermal paper roll parameter requirements:

Journal tape width: 80 +1/-0 мм
Thermal sensitve layer: outside
Roll diameter: maximum 80 mm
Paper thickness: 60-75 μм

Fpr controls the paper roll availability. When paper is missing the device is blocked from normal operations. To load the paper put the roll inside the nest the way it is showed and close the printer cover.





1.6. INSTALLATION AND PUTTING INTO OPERATION

The FPR should be installed by an authorized specialist. Using a software application the specialist will program the obligatory parameters of the fiscal receipt, the tax groups as well as the desired parameters of the articles, operators, etc.

The putting into operation (a.k.a. fiscalization) is a procedure for activation of the fiscal memory of the FPR. It is performed by a representative of the authorized service organization entered into the passport of the fiscal device in the presence of the tax-liable person.

1.7. TYPES OF DOCUMENTS ISSUED BY THE FPR

Until its putting into operation all documents issued by the FPR are marked **"RECEIPT"**. The turnover data is stored only in the operative memory of the device.

After its setting in operation all customer receipts, daily financial reports with zeroing and the FM reports issued by the FPR are marked **"FISCAL RECEIPT"**. The turnover data is stored into the fiscal memory of the device. All other documents issued by the FPR are marked **"RECEIPT"**.

All examples included in the present manual are for fiscalized FPR, i.e. the receipts will be marked either **"FISCAL RECEIPT"** or **"RECEIPT"**

2. FUNCTIONAL DESCRIPTION OF TSL FP05

2.1. FUNCTIONS OF FPR

The FPR is controlled by a software application (SA) through an asynchronous serial RS232 interface. The device is designed to follow set of commands, arranged logically depending on the operations to be performed. The software application does not have a direct access to the resources of the FPR but may obtain information about all data related to the status of the fiscal device and its fiscal memory.

The FPR is intended to perform the following functions:

- To record and store (under the control of the SA) the data input upon its putting into operation (tax number, date and hour of fiscalization);
- To record and store (under the control of the SA) the rates of 5 tax groups designated with the letters A, B,C,D and E and the date of their update;
- To record and store (under the control of the SA) the header containing information about its owner – name and address of the company/POS;
- To record and store (under the control of the SA) its own database of up to 100 articles with their names, prices and tax groups;
- To set (under the control of the SA) the correct date and hour (only for zero daily reports) and to update the real-time clock;
- To print (under the control of the SA) fiscal customer receipts;
- To record and store the accumulated daily turnovers of the 5 tax groups;
- To print (under the control of the SA) various fiscal and non-fiscal reports;
- To print (under the control of the SA) unofficial reports including reports for received on account (RA) and paid out (PO) amounts as well as fiscal reports of sales;
- To print (under the control of the SA) diagnostic and other unofficial information.

The FPR remembers its status in cases of power supply failure. If there is a power supply failure during the printing operation the FPR will resume printing when the power supply is restored and will print out an additional line with the report
* *** LOW POWER * ***.

2.2. PRINTING DOCUMENTS WITH FPR

All documents issued by the FPR start with the header (pre-programmed lines) and finish with footer containing the date and hour of its printing, its type (legal / service or inlegal).

2.2.1. CUSTOMER FISCAL RECEIPTS

These are the most common documents issued by the FPR. They give an account of the sale transactions, corrections, types of payment and other relevant information. The daily fiscal reports with zeroing and fiscal memory storage too.

FPR has two optional printing formats for printing the information in the standard customer fiscal receipts – detailed and brief. In the former format the information for article name, quantity, single price and total amount is printed in separate lines.

The fiscal receipts are printed in the following sequence: the fiscal receipt is initiated, the sale transactions are registered, payment is transferred and the receipt is finalized. This is usually done with the following commands 30h, 31h, 32h, 35h, 37h and 38h.

2.2.2. COPY OF THE LAST ISSUED FISCAL CUSTOMER RECEIPT

FPR can print a copy of the last issued fiscal customer receipt. The operation is performed with the command 3Ah. FPR prints a customer receipt marked "**DUPLICATE**".

2.2.3. RECEIPTS FOR RA AN PO

FPR keeps track of the cash on hand both for the FPR in general and for the individual operators. It registers all payments received, the types of the individual payments as well as the so called RA and PO amounts. These operations are issued prior to initiation of a receipt with the command 3Bh.

2.2.4. REPORTS

The reports are generated by the fiscal printer in response of the corresponding command of the SA. The SA cannot change the type of the report. The following types of reports are supported:

Fiscal memory report – special. FPR provides a report for the whole fiscal memory and prints all special events stored in it. The document is marked "**SERVICE RECEIPT**".

Detailed fiscal memory report by initial and final FM block numbers. The document is marked "**RECEIPT**".

Brief fiscal memory report by initial and final FM block numbers. The document is marked "**RECEIPT**".

Detailed fiscal memory report by initial and final FM block dates. The document is marked "**RECEIPT**".

Brief fiscal memory report by initial and final FM block dates. The document is marked "**RECEIPT**".

Daily financial report. Depending on parameter could be without ('X') or with **zeroing and storage in the fiscal memory** ('Z').The document is marked "**RECEIPT** " or "**FISCAL RECEIPT**".

Operator's report for individual operator or for all operators. It may be with or without zeroing, but when it is with zeroing ('Z') it must be for all operators. The document is marked "**RECEIPT**".

Report by articles. It may be with or without zeroing, but when it is with zeroing. The document is marked "**RECEIPT**".

The software application may receive additional data from the FPR for the accumulated amounts and other data in response to the following commands: 6Dh, 6Eh, 6Fh, 71h, 72h, 73h, 74h (see Art. 4.)

When the daily financial report is printed a new data block is stored into the fiscal memory of FPR (if the FPR is set into operation). The daily financial report contains information about:

- the number[1] and value of discounts;
- the number[1] and value of additions;
- the number[1] and value of corrections;
- the number[1] and value of RA amounts by type of payment;
- the number[1] and value of PO amounts by type of payment;
- the available cash[1] by type of payment;
- The value of sales turnovers , the net amount и the tax deductions for every individual tax group;
- the value of the total sales turnover[2] (since the previous daily report with zeroing and FM record);
- EJ serial numbers and signatures if any1 since the previous daily report with zeroing and FM record;
- Number client receipts since the previous daily report with zeroing and FM record;
- the total turnover[2], the total net turnover[2] and the total amount of the tax deductions[2] (since the date of putting the FPR into operation);
- the consecutive number of the report in the FM[2;]
- Number free FM records;

- the consecutive number of zeroing Z, the date and hour of its printing.

[1]printed only when their value is not zero, [2]printed in the daily financial report

Caution!!!

Daily financial reports should be printed every day `in order to accumulate the daily turnovers. They should be attached to separate of the cash register journal of the POS.

When the FM reports are printed data is being read from the FM. The FM contains information about all accumulated turnovers by tax groups. This information is stored in data blocks with consecutive numbers, date and hour of storage. Besides these blocks the FM contains data blocks registering the following events: fiscalization; changes of tax rates; changes of decimal point position; RAM resets.

Sample detailed FM report by initial and final data block and sample brief FM report by initial and final date.

If more than 24 hours since the last Daily financial report has been passed the printer is blocked from further operation until Daily report is done.

The operator's and the article reports provide additional internal information for goods and money flows in the POS. They may be printed and zeroed at any time independently of the daily financial report, i.e. they contain information collected since their last zeroing.

2.2.5. FREE-TEXT NON-FISCAL RECEIPTS

These receipts may contain texts (non-financial information) which may not be wider than 46 symbols (all other receipts are 48 symbols wide).

2.3. BLOCKS AND ERRORS OF THE FISCAL PRINTER

2.3.1. BLOCKS. ILLEGAL COMMANDS

FPR disallows the execution of certain commands that cause data overflow or require zeroed reports. It also disallows the execution of commands depending on the logical status of FPR (for example a programming command when there is an opened receipt, etc.). In all cases FPR responds stating the reason for the command block.

2.3.2. OPERATIVE ERRORS

These are the errors that may be corrected by the operator (out of paper, overheating, etc.). When they are corrected (paper roll is loaded, printing head cools) the FPR will resume printing and will be ready to receive subsequent commands.

Note:

FPR constantly monitors the paper detectors. If there is no paper and a printing command is received, it will not be executed and if the printer runs out of paper during printing it will remain "blocked" until a new paper roll is loaded (see 1.4.) and the current printing operation is finalized.

2.3.3. EMERGENCY MODE OF THE FPR

The fiscal printer enters this mode if at least one of the following events occurs:

- RAM error;
- clock error;
- lack or failure of the FM module;
- inaccessible FM;

- FM overflow.

The mode allows the execution of reading commands only. It also allows FM reports to be issued but only if there are no RAM or clock errors.

Detailed information about the current status of the FPR is contained in a 5-byte report obtained with the command 20h.

2.4. AUTONOMOUS MODE OF THE FPR

This is operation mode that is not driven by the application software. With the control panel buttons (pt. 1.3.3.) is possible to print: **daily report without zeroing**, **brief report of the whole fiscal memory** and **diagnostic information**, also it is possible to **close open receipt paying it in cash**.

Diagnostic receipt:

```
        COMPANY NAME
      COMPANY ADDRESS
         *  *     *  *
       VAT No:    123456789012345
          PIN:    123456789012
        TREMOL   FP05
      = DIAGNOSTICS =
Wersion 1.00TRFP05          K.C.9D05
Baud rate:                  115200 bps
Fiscal                        Y
Free FP records:            3395
EEPROM:                     OK
Printer temperature:        30..35
Characters per line:        48
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDE
FGHIJKLMNOPQRSTUVWXYZ[\]_`abcdefghijk
lmnopqrstuvwxyz{|}~
```

3. SAMPLE RECEIPTS

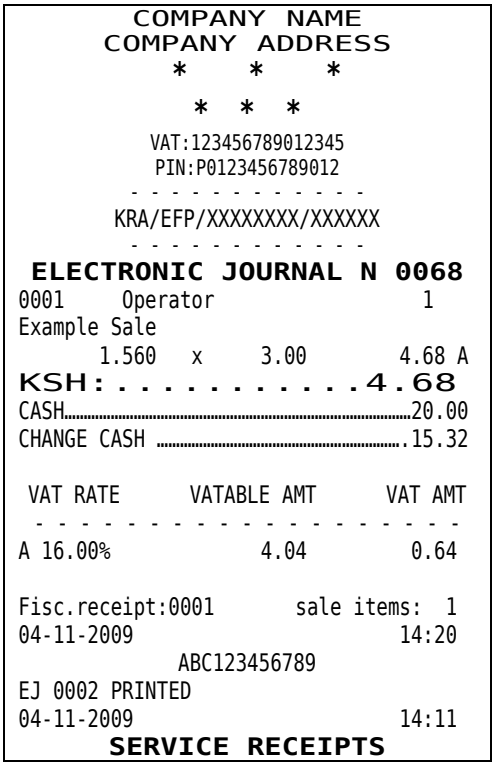
```
COMPANY NAME
COMPANY ADDRESS
*   *   *
*  *  *
VAT:123456789012345
PIN:P0123456789012
- - - - - - - - - - - -
KRA/EFP/XXXXXXXX/XXXXXX
- - - - - - - - - - - -
START OF LEGAL RECEIPT
0001

PUT INTO OPERATION FROM:
04-11-2009                    14:11
*  *  *  *  *
Fisc.receipt:0001
04-11-2009                    14:11
ABC123456789
END OF LEGAL RECEIPT
```

```
COMPANY NAME
COMPANY ADDRESS
*   *   *
*  *  *
VAT:123456789012345
PIN:P0123456789012
- - - - - - - - - - - -
KRA/EFP/XXXXXXXX/XXXXXX
- - - - - - - - - - - -
START OF LEGAL RECEIPT
0001     Operator  01
Example Sale
      1.560   x     3.00        4.68 A
KSH:. . . . . .4.68
CASH.....20.00
CHANGE CASH .....15.32

 VAT RATE      VATABLE AMT      VAT AMT
 - - - - - - - - - - - - - - - - - - -
A 16.00%             4.04         0.64

Fisc.receipt:0001        sale items:  1
04-11-2009                      14:20
            ABC123456789
END OF LEGAL RECEIPT
```



```
          COMPANY NAME
        COMPANY ADDRESS
            *    *    *
              *  *  *
          VAT:123456789012345
          PIN:P0123456789012
        - - - - - - - - - - - -
        KRA/EFP/XXXXXXXX/XXXXXX
        - - - - - - - - - - - -
 ELECTRONIC JOURNAL N 0068
0001     Operator                1
Example Sale
      1.560   x     3.00        4.68 A
KSH:. . . . . . . . . . .4.68
CASH.....................................20.00
CHANGE CASH .....................................15.32

 VAT RATE      VATABLE AMT      VAT AMT
 - - - - - - - - - - - - - - - - - - - -
A 16.00%             4.04         0.64

Fisc.receipt:0001       sale items:  1
04-11-2009                       14:20
            ABC123456789
EJ 0002 PRINTED
04-11-2009                       14:11
       SERVICE RECEIPTS
```

COMPANY NAME
COMPANY ADDRESS
* * *
* * *
VAT:123456789012345
PIN:P0123456789012
- - - - - - - - - - - -
KRA/EFP/XXXXXXXX/XXXXXX
- - - - - - - - - - - -

START OF LEGAL RECEIPT

0001

"Z" DAILY

* * SALES REPORT * *

Receipts 1

~~~~~~

SUM IN SAFE:

CASH.....4.68

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

DAILY TURNOVER, VAT

VAT *A 16,00%

Turnover.....4.68

net 4.04

VAT.....0.64

VAT *B 0,00%

Turnover.....0.00

net 0.00

VAT.....0.00

VAT *C 18,00%

Turnover.....0.00

net 0.00

VAT.....0.00

VAT *D 20,00%

Turnover.....0.00

net 0.00

VAT.....0.00

VAT *E 0,00%

Turnover.....0.00

net 0.00

VAT.....0.00

TOTAL AMOUNT.....4.68

EJ 0002 24a7ed7a973a4bb780e3
58db2a2bb5c8f52aaa25

Revenue receipts:.....0001

TOTAL HEADER CHANGES:.....1

TOTAL VAT CHANGES:.....1

TOTAL CMOS ERRORS:.....1

TOTAL FM DISCONNECT:.....0

TOTAL INTERVENTIONS:.....0

FM TURNOVER.....281.68

FM NET TURNOVER.....280.93

FM VAT.....0.75

* * * * *

FM Block N: 0017

FM FREE 1940

CLEAR Z 00002

04-11-2009 14:11

ABC123456789

END OF LEGAL RECEIPT